Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A non-volatile memory comprising:

an array of non-volatile memory cells; and

a stack controller coupled to receive an address and to determine an appropriate address for accessing values in a stack stored in a subset of the array of non-volatile memory cells, the stack having a stack depth configured in a nonvolatile memory to store parameter values, where each memory write invalidates previous data and further wherein the stack controller updates a pointer to a first valid word in the stack, the stack controller to maintain the stack utilizing two blocks of the non-volatile memory cells and to cause a first block to be erased when each word within the first block is invalid and the values in the stack are stored in a second block of the non-volatile memory.

2. (Currently Amended) The non-volatile memory ~~stack~~ of claim 1 wherein the first block and the second block ~~nonvolatile memory includes a pair of blocks that~~ are erased independently.

3-4. (Canceled)

5. (Currently Amended) The non-volatile memory ~~stack~~ of claim 1, the stack

controller further including a register to store an offset value used to generate an address for words in the nonvolatile memory.

6. (Canceled)

7. (Currently Amended) The non-volatile memory ~~stack~~ of claim 1, wherein the ~~further including a smart~~ stack controller is configured to distribute write cycles across multiple blocks of the nonvolatile memory.

8-10. (Canceled)

11. (Currently Amended) A method to manage a stack in a non-volatile memory having an array of cells logically organized as blocks, the method comprising:

receiving an address corresponding to an access to the stack;

maintaining a nonvolatile stack to store parameter values in words of a nonvolatile memory where a write of the nonvolatile stack invalidates previous instructions or data stored in the nonvolatile stack;

updating a pointer to a first valid word in the stack

maintaining the stack utilizing two blocks of the non-volatile memory cells and to cause a first block to be erased when each word within the first block is invalid and the values in the stack are stored in a second block of the non-volatile memory.

12. (Currently Amended) The method ~~nonvolatile stack~~ of claim 11 wherein a

memory pool in at least first and second blocks of the nonvolatile memory are sized to balance cycling and data retention capabilities with a write specification.

13. (Currently Amended) The method ~~nonvolatile stack~~ of claim 11 further comprising ~~including a stack controller to distribute~~ distributing write cycles across multiple blocks of the nonvolatile memory.

14. (Currently Amended) The method ~~nonvolatile stack~~ of claim 11 wherein the nonvolatile memory maps a received address to determine memory blocks to be written.

15-31. (Canceled)

32. (Previously Presented) The stack of claim 1 wherein the nonvolatile memory is a polymer memory that includes ferroelectric memory cells.